



## Fact Sheet:

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### **RENEWABLES AND ENERGY EFFICIENCY PLANNING (REEP)**

#### **The Problem**

Executive Order 12902 (1994) requires all Federal facilities to reduce energy and water consumption and costs by 30 percent between 1985 and 2005, 1985 being the baseline year. To comply with these energy and resource savings mandates and to establish funding streams specifically for energy and resource conservation, Department of Defense (DOD) planners and installation energy managers needed the capability to estimate the energy and resource savings potential, determine the implementation cost, and calculate the financial viability. Until the Renewables and Energy Efficiency Planning (REEP) computer program existed, there was no way to estimate these potentials and their associated economics across DOD.

#### **The Technology**

The U.S. Army Construction Engineering Research Laboratories (CERL) developed the REEP program. REEP is a personal computer (PC)-based Energy Conservation Opportunity (ECO) and Water Conservation Opportunity (WCO) evaluation system. Conservation opportunities vary from operation and maintenance (O&M) improvements for buildings and infrastructure to installation of new energy and water efficient technologies or systems. With REEP, users can assess opportunities to conserve energy, save water, and reduce pollution while calculating an annual savings for each opportunity. The system also

calculates each opportunity's simple payback, savings-to-investment ratio, and adjusted internal rate of return. The program can analyze 102 opportunities to conserve energy and water.

The REEP program characterizes each DoD installation using over 100 installation-specific entries and has a total of 239 installations in its database. The database contains information such as thousands of square feet for nine different facility types, heating and cooling capacities in different size ranges, weather and utility information, and more for each installation. Results of analyses can be downloaded into reports or spreadsheets and sorted for financial, resource, or pollution prioritization. REEP is easy to use and was primarily designed to analyze large sets of buildings collectively. The program allows users to modify and update installation database values and modify ECO and WCO variables such as cost and efficiency.

REEP runs on an IBM PC with 9 megabytes of hard disk space and 12 megabytes of random access memory (RAM) using Microsoft Windows 3.1 or higher operating system.

### **Benefits/Savings**

The REEP program provides broad-based analytical capabilities not previously possible. The program can benefit installation energy managers by highlighting lucrative areas for conservation and can help DOD managers develop budget requirements for conservation programs and investment strategies.

REEP can focus preliminary efforts towards areas demonstrating the greatest savings potential and save on auditing and analysis costs.

### **Status**

Although its developers continue to integrate improvements into REEP, the program is currently available from CERL via the Internet. It will also be available on the National Institute of Building Sciences' 2<sup>nd</sup> Quarter 1998, Construction Criteria Base CD-ROM issue. It has been distributed to numerous DOD installations and is also being used at higher levels of command (e.g., the Office

of the Assistant Chief of Staff for Installation Management is using it to develop investment strategies).

**Point of Contact**

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To download the program on the Internet, visit the CERL REEP web site at <http://owwww.cecer.army.mil/reep/reep.html>

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